

Republic Wastewater Infrastructure Needs



Figure 1: Located in Northeast Washington, in Ferry County, the City of Republic sits next to the Sanpoil River.

More information

Ecology spoke with the City of Republic to gather a representative example of small community wastewater infrastructure needs.

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ADA Accessibility

To request an ADA accommodation, contact Emma Hanson (details above), or visit <https://ecology.wa.gov/accessibility> for relay service or TTY call 711 or (877) 833-6341.

Community vision

Historically, Republic was surrounded by gold mines and lumber mills. However, with both the mills and mines closing by the early 2000s, Republic has been shifting towards tourism.

The current prominent economic base is residential services, like the schools, the hospital, grocery stores, lodging and gas stations. The community's overall vision is to become a destination while remaining a place for those wanting a rural lifestyle. Along with tourism, the City is hoping to connect the Ferry County Rail Trail into the City's limits.

Existing wastewater infrastructure

The City owns, operates and maintains the wastewater facilities serving the City's sewer customers. As a result, the City has established procedures and structure for the long-term sustained operation and maintenance of their current and future facilities.

The City's old, cement sewer pipes have developed cracks where stormwater and groundwater infiltrate the sewer systems. This infiltration into the sewer system, in a residential area known as the President's Bowl, contributes to levels nearing capacity in the City's wastewater treatment plant's lagoons. The treatment facility and lagoon dikes are directly on the west bank of the Sanpoil River and any overflows flow immediately into the River. In past years, preventive measures by the City have included sandbagging, backfilling, and pumping of treated wastewater to a stormwater pond. While this works for now, they are only temporary emergency solutions.

Photos of existing infrastructure

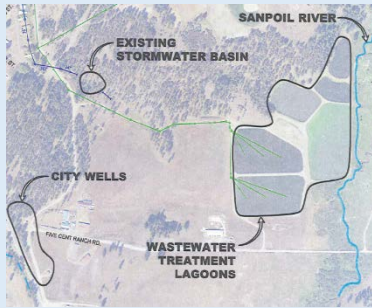


Figure 2: Republic's wastewater treatment infrastructure in proximity to other key features.

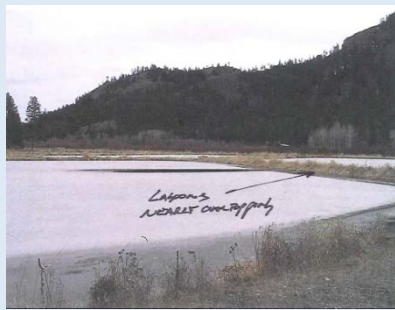


Figure 3: Republic's wastewater treatment lagoons nearly overflowing.



Figure 4: The Sanpoil River's immediate threat from overflowing lagoons and groundwater seepage.

Needed wastewater infrastructure

The Sanpoil River is identified by Ecology as impaired for fecal bacteria content, low dissolved oxygen, high temperatures and low pH. Because of the immediate proximity of the Sanpoil River to the wastewater treatment facility, it is at imminent threat of a catastrophic discharge of sewage when the lagoon contents breach the top of the dike. A breach of the lagoon dike has happened before and is expected to happen again unless these issues are addressed. Republic is working to upgrade their wastewater treatment system to avoid a breach.

Near the Sanpoil River are three drinking water supply wells that are at risk of contamination. The wells are the sole potable water source for Republic and the community of Pine Grove. The wells are downhill from the stormwater basin that receives excess effluent. Only 1,500 feet and gravity separates these wells from the basin.

The City is working on developing a facility plan update that will evaluate options for upgrades to the wastewater treatment system. This report will support design of the improvements to the wastewater treatment system in an Engineering Report. These improvements will protect water quality and bring the City into compliance with its Wastewater Discharge Permit. The Facility Plan update will fully evaluate alternatives for:

- Infiltration and inflow reduction planning at Presidents Bowl to reduce stormwater routing to the wastewater treatment system,
- Installation of a new headworks and influent flow measuring system
 - during spring runoff conditions, influent flows of exceed the design capacity of the treatment system and overload the treatment facilities operations, and
- Permanent pumping and piping for conveyance to the stormwater detention pond for overflow from the wastewater lagoons to reduce the chance of a breach of the wastewater treatment pond dikes.

Funding, contracting and construction of the the wastewater treatment system upgrades are anticipated to complete by December 2023. Securing funding to construct these improvements will be a great hurdle, as *the current early estimate for design and construction is more than \$6 million.*

Fiscal standing

Funding sources

Republic has been increasing sewer rates in recent years to meet the small match required to qualify for available grant opportunities. The sewer rates are based on actual costs to the City. For example, at the start of 2014, residential units were charged \$25 a month and now they are \$31.50 per month.

Type of Connection	2020 Sewer Rate per Month
Family residences	\$31.50
Hotel and motels	\$32.50 plus \$3.00 per additional unit
Schools and hospitals	\$65.50 per building
Churches/commercial	\$31.50

Table 1: Monthly sewer rates per connection type in Republic.

Depending on future needs and projects, rates are evaluated and adjusted accordingly at the end of each year. The last several years have seen about \$1.50 increase annually on both the water and the sewer utility rates. Republic's residents also received a tax increase in 2019. Due to the County's and City's poverty status, Republic is hesitant to assume additional debt, which would further increase utility rates. In 2020, the City's economy took a hit as events and tourist attractions experienced cancellations and closures due to the response to COVID-19.

Debt

Debt To	Debt For	Debt Amount	Debt Paid Off (Estimated Year)
United States Department of Agriculture (USDA)	Water project	\$1,245,479	2045
USDA	Wastewater project	\$308,064	2043
Washington Department of Ecology	Wastewater project – Facility Plan Amendment	\$72,325	2025
Washington Department of Ecology	Stormwater project – President's Bowl Stormwater Management Plan	\$31,518	Tentative, agreement still in negotiation as of publication

Table 2: Estimated debt for Republic.

Public Involvement

Most of the public is familiar with the stormwater infiltrated in the Presidents Bowl area that routes to the wastewater treatment system, generating flows that overload the wastewater treatment capacity. After the wastewater facility plan amendment is complete Republic plans to meet with the public to further discuss the improvements needed to the wastewater treatment system; this is anticipated before the end of 2020.